

## **ENERGY USED, TIME LOST, RESULTS MISSING**

### **INTRODUCTION**

California has adopted an ambitious energy conservation and greenhouse gas emissions reduction program, *California Global Warming Solutions Act of 2006*, more commonly known as Assembly Bill 32 (AB 32). The program's goal is to reduce emissions associated with global warming or climate change to levels experienced in 1990 by the year 2020. The means of achieving the goal is through enhanced energy conservation.

AB 32 requires each of California's counties and cities to develop and enact a Climate Action Plan reflecting differing conditions found within each community. The County of San Luis Obispo (County) and the seven cities located within the county have all adopted local Climate Action Plans (CAP). The County CAP, adopted in November 2011, is entitled "EnergyWise Plan" (EWP); it commits the County to energy conservation measures both in the unincorporated area of the county and in its own operations. It has been nine years since the passage of AB 32 and more than three years have passed since the adoption of the EWP. The County's implementation for its own facilities, anticipated to start in Fiscal Year 2011-2012, began in 2013. This delay in progress on the EWP may prove costly to the County as energy cost reduction opportunities are delayed or lost entirely.

This report will review what actions the County has taken to reduce energy use in its own facilities and examine the timeliness of those actions given goal achievement standards and dates set by the state and County. This report does not address the portions of the EWP concerned with the conservation opportunities offered by County employee commuting and County vehicle operations. It does not address the larger opportunities for energy conservation presented by the activities of the community as a whole. This report also does not concern itself with the merits of climate change science.

## ORIGIN

This case was initiated by the County Committee of the 2014-2015 San Luis Obispo County Grand Jury (Grand Jury) on its own initiative.

## AUTHORITY

*California Penal Code section 925* authorizes the Grand Jury to investigate and report on the operations, accounts and records of a county officer, department or function.

## METHOD

The County Committee of the 2014-2015 Grand Jury conducted the investigation. The following were interviewed:

- County staff involved in implementing County energy conservation policy
- Persons employed in the private sector with knowledge of energy efficiency, renewable energy and the County's energy conservation reduction activities

Documents reviewed included:

- The San Luis Obispo County EnergyWise Plan (2011)
- *California State Assembly Bill 32* (2006)
- *Climate Change Adaptation Planning in San Luis Obispo County*, GEOS Institute, 2010
- The County's contract with Vanir Construction Management for performing Facility Condition Assessments of County facilities (2014)
- The County's contract with Pacific Gas & Electric for Investment Grade Assessments of County facilities (2014)
- *Renewable Energy Streamlining Program, Opportunities and Constraints Technical Study*, Aspen Environmental Group and the County of San Luis Obispo (2014)

A Glossary of key acronyms and technical terms is found at the end of the report.

## BACKGROUND

Energy conservation has been a subject of government policy for at least four decades. The various oil supply disruptions of the 1970s led to legislation setting vehicle mileage standards. Those standards have been revised upward several times. Government action has continued with energy consumption standards (ENERGY STAR) for appliances, computers, furnaces and air-conditioners.

The federal and state governments, notably California, have occasionally offered incentives to businesses and individuals to install equipment that produces renewable energy such as wind-power generators or solar power modules. These incentives have at times been available to government entities.

These measures had their intended effect. The average energy consumption of an individual in 2014 was the same as in 1968 despite the proliferation of electronic devices in the interim. The annual amount of power generation in the state attributable to renewable sources has increased from 6800 MW in 2001 to 18,800 MW in 2014.

AB 32 follows up on previous government efforts to bring about energy conservation. It is the **first** legislated program in the country to take a comprehensive long-term approach to energy conservation as a means of addressing climate change.<sup>1</sup>

## NARRATIVE

The County Board of Supervisors (Board) adopted its EnergyWise Plan (EWP) in response to state legislation (AB 32) requiring local governments to set specific goals, plans and deadlines for reducing greenhouse gases (GHG) emissions through energy conservation. In 2011 the Board incorporated EWP as part of the Conservation and Open Space Element (COSE, 2010) of the County's General Plan.

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<sup>1</sup> <http://www.arb.ca.gov/cc/ab32/ab32.htm>

The EWP commits the County to the goal of reducing its GHG 15% below the level of 2006 through energy conservation, a reduction to the level of 1990. The County owns and/or operates approximately 200 buildings. The energy bills for those buildings amount to about \$2,400,000 per year. Given the potential for saving money through lowering energy costs, the County's interest in reducing energy use in its buildings would be warranted without AB 32 or EWP.

Effective action to reduce energy use in County buildings will involve gathering and analyzing considerable data on the efficiency of each building's electrical and mechanical systems.

Without that necessary data the County cannot predict whether the installation of new equipment will save money and when the savings will be reflected in lower energy costs. EWP implementation was scheduled to begin in late 2011. The process of evaluating each building's energy efficiency began in 2013, a two-year loss of potential cost-saving opportunities.

## **FACILITY ENERGY EFFICIENCY ACTIVITIES PRE-EWP (November 2011)**

### ***GHG Inventory***

A comprehensive inventory of County GHG emission levels was prepared in 2006 and subsequently adopted as part of the COSE in 2010; the inventory's calculations are based on emission levels of 2006.

### ***American Recovery and Reinvestment Act Block Grant—Financed Facility Retrofits***

In 2009 the County received a grant through the American Recovery and Reinvestment Act's Energy Efficiency Conservation Block Grant program. A portion of the grant was devoted to retrofitting heating, ventilation and air conditioning, and outdoor lighting systems at existing County facilities. The County completed partial retrofits on 25 of its facilities pre-EWP. Those facilities now use approximately \$30,000 less electricity per year. This experience demonstrated the potential for cost savings through energy efficiency.

## **FACILITY ENERGY EFFICIENCY ACTIVITIES POST-EWP**

### ***Feasibility Analysis and Preliminary Energy Assessment***

A Preliminary Energy Assessment (PEA), conducted by Pacific Gas and Electric (PG&E) and completed in 2012, focused on 12 facilities and identified potential energy conservation measures. These 12 facilities are either large-sized, have high-occupancy, are in operation 24 hours a day or have some combination of those characteristics. These buildings represent the largest opportunities for the County to improve the energy efficiency of its facilities and save money. In 2013, PG&E performed a Feasibility Analysis of facility utility bills to look for potential energy saving opportunities and found that these 12 facilities, out of approximately 200, accounted for 80% of the County's total energy usage. Further analysis of the PEA findings is within the scope of the Investment Grade Assessments PG&E will perform for the County.

### ***Facility Condition Assessments (FCA)***

A facility condition assessment is defined as the process of conducting an independent and objective condition assessment of all site and building improvements and systems in accordance with recognized industry standards. This includes identification of deferred maintenance, code violations, safety issues, construction deficiencies, recommendations for improvements; prioritizing short-term needs and repairs and includes a minimum 20-year capital replacement budget and a replacement reserve-funding plan.

The County acknowledges it does not know the level of deferred maintenance nor the quantity of inadequate mechanical and electrical equipment installed in or associated with County buildings. The County approved a one-year contract with Vanir Construction Management, Inc. (Vanir) on November 4, 2014, with an option for extension annually up to four additional years, to perform FCAs on its facilities. The FCAs will provide the information necessary to prioritize repair or replacement of building components moving the County into a more proactive and planned approach to facilities management. It is anticipated obsolete and energy-inefficient systems will be replaced using cost-benefit analysis, including length of payback time.

### ***Investment Grade Assessments /Audits***

An Investment Grade Assessment (IGA) is a comprehensive analysis of potentially expensive energy efficiency improvements with a distinct focus on financial concerns and return on investment. It is the primary tool for determining those projects identified by an FCA that are financially worth implementing.

On November 25, 2014, the County entered into an agreement with PG&E to provide IGAs of the 10 County facilities shown in the Appendix. The IGAs will be conducted as part of PG&E's Sustainable Solutions Turnkey (SST) program. PG&E represents the SST does provide a comprehensive, streamlined and cost effective approach toward implementing energy efficiency and conservation measures. PG&E further represents the SST program offers a wide range of services including engineering and design, construction and installation, contract administration, commissioning, modeling for financial support, utility rebates and incentives support, and system warranties. By participating in SST, the County will identify and develop projects to help it realize savings in energy usage and costs. The contract with PG&E can be extended annually up to a maximum of five years.

### ***Renewable Energy Streamlining Program***

The County has developed the Renewable Energy Streamlining Program (RESP) to streamline permitting of certain renewable energy projects in suitable locations in the unincorporated area of the county. The EWP states the County will increase the use of renewable energy sources in County facilities to account for 10% of total energy used by 2020. The same goal applies to the private sector in the unincorporated area. This will be accomplished in part through revisions to County ordinances and policies; the Coastal Zone is not part of this program. The goal of streamlining is to increase the certainty of the permitting process and reduce the time it takes to approve renewable energy development projects. Funding for this effort came from a \$638,152 grant from the California Energy Commission.

To help meet the 10% goal for renewable sources, the County contracted with Aspen Environmental Group (Aspen) to generate the "Opportunities and Constraints Technical Study (OCTS)." OCTS identifies the County's renewable energy resources and locations where

renewable energy projects would be most appropriate given environmental, historic, esthetic and legal considerations. OCTS was completed in April 2014 and has been included in the EWP. The RESP was approved by the Board on March 24, 2015.

## **PERSONNEL AND RESOURCES INVOLVED IN IMPLEMENTING EWP**

### ***Energy Executive Steering Committee***

The Energy Executive Steering Committee (EESC) was formed to coordinate County energy-related policy and activities. Committee members are executives from several departments including Administration, General Services, and Planning and Building; the same departments responsible for implementing EWP. The EESC is tasked to provide updates on a biennial basis to the Board on the County's energy strategy but has not done so since 2012. The committee has been meeting infrequently and without the regular attendance of all members.

### ***Energy Community of Interest***

The County's Energy Community of Interest (ECOI) is made up of staff from the County Administrative Office, Planning and Building Department, General Services Department and Public Works Department. The ECOI, intended to serve as the County's energy expert, meets monthly and is active in coordinating the County's energy efficiency efforts. The ECOI makes recommendations to the EESC.

### ***Utility Coordinator/Energy Manager***

The utility coordinator position was created approximately 13 years ago; it has been vacant for the past three years. Ordinarily this person would have the role of identifying, proposing and overseeing improvement projects related to implementing the EWP. The County has been unable to fill the position; it has instead contracted with Water Systems Consulting, Inc. in December 2014 to perform the tasks of the utility coordinator.

### ***“Utility Manager” (Software)***

“Utility Manager” is the software the County uses for its utility bills. “Utility Manager” is no longer supported by its vendor, cannot be updated and is inadequate for the task of implementing

the EWP. For example, while the software is capable of tracking energy usage by the approximately 200 County facilities, it cannot readily identify those facilities in which energy use is out of proportion to the size, occupancy and hours of use. The County contracted Water Systems Consulting, Inc. to research and recommend an appropriate replacement.

## **CONCLUSIONS**

The County adopted its EnergyWise Plan in 2011 to meet the goals set forth in AB 32 – reduce GHG emissions from its own activities and the unincorporated areas of the county by 15% through energy conservation by 2020. AB 32 became law in 2006; major portions of the County’s implementation of its EnergyWise Plan remain to be accomplished as of May 2015. Success in meeting that goal will require the acquisition of considerable data about the County’s buildings, their condition and their energy use. That data will remain unavailable at least until results from the Facility Condition Assessments and Investment Grade Assessments become known. The County’s lack of both an energy manager and adequate computer software to manage energy usage and efficiency has left the County with less than six years to achieve compliance with AB 32 and with its own EnergyWise Plan.

## **FINDINGS**

F1. The EnergyWise Plan commits the County to a 15% reduction of GHG by its own facilities by 2020.

F2. Responsibility for implementing EWP is divided among several County departments including Administration, Planning and Building, General Services and Public Works.

F3. Fully implementing the EWP has been delayed because the County has not provided adequate funding, staff or priority.

F4. The County’s utility coordinator/energy manager position has been vacant for three years.



F5. The computer software currently used by the County to track its energy usage is incapable of providing the information necessary for timely implementation of the EWP.

F6. The contracts with PG&E for Investment Grade Assessments and with Vanir Construction Management for Facility Condition Assessments will provide the County with pertinent data critical for successful implementation of the EWP.

F7. The EWP calls for periodic review and updating of the plan. The County has not reviewed and updated the EWP since August 2012.

F8. Reaching the 2020 GHG reduction goals and associated cost savings will have to be accomplished over a shorter, five-year period rather than the original eight years.

F9. The County can realize considerable energy cost savings if EWP goals are accomplished by 2020.

## **RECOMMENDATIONS**

R1. The Board of Supervisors should allocate sufficient funds to implement the EWP ensuring the planned reduction in energy usage by County facilities as outlined in the EWP is realized within the set timeframe.

R2. County Administration should make staff available to complete implementation of the EWP within the established timeframe.

R3. County Administration should make the data produced by the IGAs and FCAs available for action by the Board of Supervisors within 60 days of receipt of such data.

R4. The Board of Supervisors should fund purchase of, and training for, utility usage and billing software capable of providing the data necessary for effective implementation of the EWP.

R5. County Administration should complete the required biennial review and updates of the EWP.

## **REQUIRED RESPONSES**

The Board of Supervisors is required to respond to Findings 1, 3-5 and 7-9; and Recommendations 1, 3 and 4.

The County Administrator is required to respond to Findings 1-9; and Recommendations 2-5.

The responses shall be submitted to the presiding judge of the San Luis Obispo County Superior Court. Please provide a paper copy and an electronic version of all responses to the Grand Jury.

Presiding Judge	Grand Jury
Presiding Judge Dodie Harman Superior Court of California 1035 Palm Street, Room 355 San Luis Obispo, CA 93408-1000	San Luis Obispo County Grand Jury P.O. Box 4910 San Luis Obispo, CA 93403-4910 GrandJury@co.slo.ca.us

## APPENDIX

### FACILITIES THAT USE THE MOST ENERGY

Facility	Address	Potential Energy Conservation Areas
Old Government Center	1050 Monterey Street	Lighting, cooling system, retrocommissioning, electrical transformers
Courthouse Annex	1035 Palm Street	Lighting, cooling system
Downtown Government Center	1055 Monterey Street	Lighting, heating & cooling systems
Downtown Library	995 Palm Street	Lighting, energy management system
Main Jail	1585 Kansas Avenue	Lighting, heating & cooling systems, retrocommissioning, electrical transformers
Juvenile Hall/ Juvenile Service Center	1065 Kansas Avenue	Lighting, heating & cooling systems
Honor Farm	885 Oklahoma Avenue	Lighting, walk-in cooler & freezer, kitchen hood controls, heating & cooling systems, electrical transformers
Health Campus	2180 Johnson Avenue	Lighting, cooling system
Public Health Laboratory	2191 Johnson Avenue	Lighting, heating & cooling systems
Social Services	3433 South Higuera Street	Lighting, electrical transformers

## **GLOSSARY**

**CAP**—Community Action Plan: Plans adopted by local governments to meet the greenhouse gas emission and energy use reduction goals of AB 32. San Luis Obispo County’s CAP is titled EnergyWise Plan.

**COSE**—Conservation and Open Space Element of the San Luis Obispo County General Plan

**ECM**—Energy Conservation Measure

**ECOI**—Energy Community of Interest: A county committee that recommends actions to the EESC

**EESC**—Energy Executive Steering Committee: A committee formed by the County to coordinate its energy policy activities

**EWP**—EnergyWise Plan: See CAP

**FCA** – Facility Condition Assessment

**GHG** – Greenhouse gases: any of various gaseous compounds (such as carbon dioxide) that absorb infrared radiation, trap heat in the atmosphere, and contribute to the greenhouse effect

**IGA** – Investment Grade Assessment

**OCTS**—Opportunities and Constraints Technical Study

**PEA**—Preliminary Energy Assessment

**RESP** – Renewable Energy Streamlining Program

**Retrocommissioning** – A systematic process for identifying less-than-optimal performance in a facility’s equipment, lighting and control systems and making the necessary adjustments; equipment is modified rather than replaced

**Retrofitting** – To modify equipment that is already in service using parts developed or made available after the time of original manufacture